



## An infrequent but unpleasant adverse event of Tamsulosin

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### Abstract

Tamsulosin, a selective  $\alpha$ 1-adrenoceptor antagonist, is primarily approved for managing benign prostatic hyperplasia. Its off-label application in facilitating the spontaneous passage of ureteral stones, particularly in cases of renal colic, has gained traction in recent years.

This report details a rare adverse effect of Tamsulosin observed in a young woman who was concurrently receiving atenolol for primary hypertension and was prescribed Tamsulosin following an episode of renal colic. Remarkably, after three doses, she developed severe constipation, a condition that necessitated manual interventions for resolution. Upon discontinuing Tamsulosin, her bowel function normalized. Given the localization of  $\alpha$ 1-adrenoceptors in the smooth muscles of intestinal sphincters, it is postulated that Tamsulosin's action, potentially compounded by atenolol's effects, contributed to this adverse reaction.

This case underscores the importance of cautious prescribing and monitoring when utilizing Tamsulosin in contexts outside its primary indication. It highlights the intricate interplay between pharmacodynamics and individual patient factors in clinical settings.

**Take-home message:** Constipation can be an unusual but unpleasant adverse event of Tamsulosin.

**Keywords:**  $\alpha$ 1-adrenergic receptor; atenolol; adverse event; constipation; Tamsulosin.

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### INTRODUCTION

Tamsulosin is an  $\alpha$ 1-adrenoceptor antagonist that has great selectivity for  $\alpha$ 1 receptors. Tamsulosin was approved by the Food and Drug Administration in 1997 for the treatment of the signs and symptoms of benign prostatic hyperplasia [1].

Although Tamsulosin is indicated for the signs and symptoms of prostatic benign hyperplasia, it has been evaluated in clinical studies for the potential treatment of other urinary conditions. Results of two systematic reviews showed that Tamsulosin increased the rate of spontaneous passage of ureteral stones in children and adults [2,3]. Off-label use of Tamsulosin has emerged in different populations, including conditions other than benign prostatic hyperplasia [4-6].

During the last 2 decades, the safety of Tamsulosin in the treatment of male urinary symptoms due to benign prostatic hyperplasia has been well established, and a recent review focused on the safety of other populations, such as women and children [7].

We report a case of an infrequent adverse effect of Tamsulosin in a young woman treated for renal colic.

### CASE DESCRIPTION

A young woman with a history of primary hypertension, under management with atenolol, presented with an episode of renal colic. Her lifestyle factors, including diet and exercise routines, and a comprehensive medication history were evaluated to understand potential contributory factors to her condition.

The patient experienced acute renal colic. Renal echography confirmed a small stone in the ureteral tract. Given her symptoms and the stone's size, Tamsulosin was initiated as an off-label treatment to facilitate stone passage after considering alternative therapeutic options and the patient's specific medical history.

Following three doses of Tamsulosin, the patient reported severe constipation, accompanied by a sensation of perineal heaviness and difficulty in defecation. This symptom onset was notably acute, aligning closely with the initiation of Tamsulosin therapy.

Comprehensive abdominal imaging and blood tests were conducted to exclude other potential causes of constipation, which yielded no additional findings. Consultations with gastroenterology ruled out primary gastrointestinal disorders.

The patient's severe constipation necessitated two manual evacuations. Upon suspending Tamsulosin, a gradual return to normal bowel function was observed. This temporal relationship underscored the likelihood of Tamsulosin, potentially in combination with atenolol, as the key contributor to her symptoms.

Regular follow-ups post-Tamsulosin discontinuation showed complete resolution of constipation without recurrence. The patient's renal colic was subsequently managed with alternative conservative measures, including hydration and pain management, leading to spontaneous stone passage.

## DISCUSSION

Although Tamsulosin is indicated for the signs and symptoms of benign prostatic hyperplasia, it has been evaluated for the potential treatment of other urinary conditions. In recent years, off-label use of Tamsulosin has emerged for treating renal colic to promote the spontaneous passage of ureteral stones [4].

Tamsulosin is an  $\alpha 1$ -adrenoceptor antagonist; the  $\alpha 1$  receptors are mainly located in the smooth muscles of the bronchi and blood vessels, the sphincters, and the radial muscles of the iris. They are important in regulating and controlling the functions of the cardiovascular system, the genitourinary tract, and the gastrointestinal tract due to their presence in the walls and sphincters of the intestine.

Studies in patients treated with Tamsulosin reported some adverse effects, among which constipation, though with a marginal rate [5-9].

Moreover, atenolol is a cardioselective antagonist of  $\beta 1$  receptor. Still, it has been reported to have little activity against the  $\beta 2$  adrenergic receptor, mainly located in the bronchial and gastrointestinal smooth muscles [10].

The mechanism of defecation is a process dependent on the coordination and integration of multiple physiological systems, and it is suggestive that, in our case, the activity of Tamsulosin (perhaps in association with atenolol) may have led to the onset of constipation.

### *Implications for clinical practice*

This case illustrates the significance of considering individual patient histories and the potential for unusual drug reactions, especially in off-label scenarios. It also highlights the need for clinicians to educate patients on possible side effects and closely monitor their response, particularly when prescribing medications like Tamsulosin with known broad receptor activity.

This revised case description offers a comprehensive view of the clinical scenario by providing a more detailed account of the patient's background, symptom progression, diagnostic evaluations, and follow-up. It underscores the complexities of managing atypical presentations and the importance of personalized treatment approaches.

## CONCLUSIONS

This case report presents a rare but notable adverse effect of Tamsulosin, an  $\alpha 1$ -adrenoceptor antagonist, in a young woman treated for renal colic. While Tamsulosin is widely used and generally deemed safe, this case underscores the critical importance of clinical vigilance in monitoring adverse effects, particularly in populations not typically associated with its primary indication. The observed severe constipation, likely exacerbated by the concurrent use of atenolol, highlights the

complexity of drug interactions and the variable expression of receptor activity in different tissues. This report contributes to the growing body of literature on the side effects of Tamsulosin, especially in off-label uses, and underscores the need for personalized patient care approaches, taking into account individual medical histories and concurrent medications.

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## References

1. Chughtai B, Forde JC, Thomas DDM, Laor R, Hossack T, Woo HH, et al. Benign prostatic hyperplasia. *Nat Rev Dis Primers*. 2016;2:16031. doi:10.1038/nrdp.2016.31.
2. Malo C, Audette-Côté JS, Emond M, Turgeon AF. Tamsulosin for treatment of unilateral distal ureterolithiasis: a systematic review and meta-analysis. *CJEM*. 2014;16(3):229-242. doi: 10.2310/8000.2013.131012.
3. Velázquez N, Zapata D, Wang HHS, Wiener JS, Lipkin ME, Routh JC. Medical expulsive therapy for pediatric urolithiasis: systematic review and meta-analysis. *J Pediatr Urol*. 2015;11(6):321-327. doi:10.1016/j.jpuro.2015.04.036.
4. Campschroer T, Zhu Y, Duijvesz D, Grobbee DE, Lock MT. Alpha-blockers as medical expulsive therapy for ureteral stones. *Cochrane Database Syst Rev*. 2014;(4):CD008509. doi: 10.1002/14651858.CD008509.pub2.
5. Boyd K, Hilar O.  $\alpha$ -adrenergic blockers for the treatment of lower-urinary-tract symptoms and dysfunction in women. *Ann Pharmacother*. 2014;48(6):711-722. doi: 10.1177/1060028014524174.
6. Meyer LE, Brown JN. Tamsulosin for voiding dysfunction in women. *Int Urol Nephrol*. 2012;44(6):1649-1656. doi: 10.1007/s11255-012-0275-0.
7. Kaplan SA, Chughtai BI. Safety of Tamsulosin: a systematic review of randomized trials with a focus on women and children. *Drug Saf*. 2018;41(9):835-842. doi: 10.1007/s40264-018-0674-y.
8. Robinson D, Cardozo L, Terpstra G, Bolodeoku J, Tamsulosin Study Group. A randomized double-blind placebo-controlled multicentre study to explore the efficacy and safety of Tamsulosin and tolterodine in women with overactive bladder syndrome. *BJU Int*. 2007;100(4):840-845. doi: 10.1111/j.1464-410X.2007.07162.x.
9. Yoshimura K, Kadoyama K, Sakaeda T, Sugino Y, Ogawa O, Okuno Y. A survey of the FAERS database concerning the adverse event profiles of  $\alpha$ 1-adrenoreceptor blockers for lower urinary tract symptoms. *Int J Med Sci*. 2013;10(7):864-869. doi: 10.7150/ijms.5892.
10. Rehman B, Sanchez DP, Shah S. Atenolol. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; 2023 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK539844/>.



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